IN THE UNITED STATES DISTRICT COURT FOR THE WESTERN DISTRICT OF TEXAS WACO DIVISION

WSOU INVESTMENTS, LLC, d/b/a BRAZOS LICENSING AND DEVELOPMENT

Plaintiff,

v.

Civil Action No. 6:20-cv-00457 Civil Action No. 6:20-cv-00459 Civil Action No. 6:20-cv-00463

Civil Action No. 6:20-cy-00455

MICROSOFT CORPORATION,

Defendant.

DEFENDANT'S SUR-REPLY MARKMAN BRIEF

TABLE OF CONTENTS

	U.S. PATENT NOS. 7,750,286 (6:20-cv-459-ADA) and 8,226,241 -cv-463-ADA)	1
	"polarization beam splitter (PBS)" (286 Patent, Claim 15)	
	"quarter-wave plate" (286 Patent, Claim 15)	
	"spatial light modulator (SLM)" (286 Patent, Claim 15; 241 Patent, Claim 15)	
II. U	U.S. PATENT NO. 8,965,978 (6:20-cv-457-ADA)	7
A.	"lobby" (Claim 12)	7
B.	"third party lobby" (Claims 1 and 12)	8
III. U	U.S. PATENT NO. 9,814,988 (6:20-cv-455-ADA)	9
A.	"adaptor unit" (Claim 20)	9

TABLE OF AUTHORITIES

	Page(s)
Cases	
Abbott Labs. v. Sandoz, Inc., 544 F.3d 1341 (Fed. Cir. 2008)	8
AFG Indus., Inc. v. Cardinal IG Co., Inc., 239 F.3d 1239 (Fed. Cir. 2001)	1
Blackbird Tech LLC v. ELB Elecs. Inc., 895 F.3d 1374 (Fed. Cir. 2018)	8
GPNE Corp. v. Apple Inc., 830 F.3d 1365 (Fed. Cir. 2016)	8, 10
Iris Connex, LLC v. Dell, Inc., 235 F. Supp. 3d 826 (E.D. Tex. 2017)	2
Medrad, Inc. v. MRI Devices Corp., 401 F.3d 1313 (Fed. Cir. 2005)	6
On Demand Mach. Corp. v. Ingram Indus., Inc., 442 F.3d 1331 (Fed. Cir. 2006)	11
Paice LLC v. Ford Motor Co. 881 F.3d 894 (Fed. Cir. 2018)	6
Phil-Insul Corp. v. Airlite Plastics Co., 854 F.3d 1344 (Fed. Cir. 2017)	9
Phillips v. AWH Corp., 415 F.3d 1303 (Fed. Cir. 2005)	5, 9
Power-One Inc. v. Artesyn Techs., Inc., 599 F.3d 1343 (Fed. Cir. 2010)	2
Rembrandt Data Techs., LP v. AOL, LLC, 641 F.3d 1331 (Fed. Cir. 2011)	9
Retractable Techs., Inc. v. Becton, Dickinson & Co., 653 F.3d 1296 (Fed. Cir. 2011)	1
Ruckus Wireless, Inc. v. Innovative Wireless Sols., LLC, 824 F.3d 999 (Fed. Cir. 2016)	

Case 6:20-cv-00455-ADA Document 50 Filed 02/24/21 Page 4 of 16

Saffran v. Johnson & Johnson, 712 F.3d 549 (Fed. Cir. 2013)	3
Senmed, Inc. v. Richard-Allan Med. Indus., Inc., 888 F.2d 815 (Fed. Cir. 1990)	
Trustees of Columbia University v. Symantec Corp. 811 F.3d 1359, 1363 (Fed. Cir. 2016)	
Verizon Servs. Corp. v. Vonage Holdings Corp., 503 F.3d 1295 (Fed. Cir. 2007)	8

Microsoft submits this sur-reply in response to Plaintiff's Reply Claim Construction Brief (Dkt. 48, "PRBr.") addressing terms of U.S. Patent Nos. 7,750,286 (the "286 patent"), 8,226,241 (the "241 patent"), 8,965,978 (the "978 patent"), and 9,814,988 (the "988 patent"). WSOU mistakenly relies on *Thorner* to argue that claim terms must be given their plain and ordinary meaning absent an explicit disclaimer or disavowal. But as *Trustees of Columbia University v. Symantec Corp.* makes clear, "[o]ur case law does not require explicit redefinition or disavowal." 811 F.3d 1359, 1363 (Fed. Cir. 2016). Indeed, "a patent applicant need not expressly state 'my invention does not include X' to indicate his exclusion of X ... because 'the patentee's choice of preferred embodiments can shed light on the intended scope of the claims." *Id.* at 1364 (citing *Astrazeneca AB v. Mutual Pharm. Co., Inc.*, 384 F.3d 1333 (Fed. Cir. 2004)).

U.S. PATENT NOS. 7,750,286 (6:20-cv-459-ADA) and 8,226,241 (6:20-cv-463-ADA) A. "polarization beam splitter (PBS)" (286 Patent, Claim 15)

Claim Term	Microsoft's Proposed Construction
polarization beam	optical component with two conjoined prisms, each of which reflects
splitter (PBS)	light of one polarization and transmits light of an orthogonal polarization

WSOU maintains the incredible proposition that, because PBS is a term of art to which "neither *Thorner* exception applies," no construction is needed. PRBr. at 1. As explained above, WSOU misreads *Thorner*. In any event, courts routinely construe such terms of art. *AFG Indus.*, *Inc. v. Cardinal IG Co., Inc.*, 239 F.3d 1239, 1248 (Fed. Cir. 2001) ("A trial court, *when construing a term of art*, must define the term in a manner consistent with the scientific and technical context in which it is used in the patent."). And the proper construction of such terms is not in the abstract, as WSOU would urge, but in light of the specification and claims. *Retractable Techs., Inc. v. Becton, Dickinson & Co.*, 653 F.3d 1296, 1305 (Fed. Cir. 2011) (citation omitted) ("It is axiomatic that the claim construction process entails more than viewing the claim language in isolation. Claim language must always be read in view of the written description.").

As an initial matter, WSOU willfully distorts Microsoft's statement of the basic tenet that a term must be construed in a fashion that allows the jury to understand what it means. PRBr. at 2. The purpose of claim construction is to assist the jury in understanding the scope of the claims. *See Iris Connex, LLC v. Dell, Inc.*, 235 F. Supp. 3d 826, 847 (E.D. Tex. 2017) (citing *Embrex, Inc., v. Serv. Eng'g Corp.*, 216 F.3d 1343, 1347 (Fed. Cir. 2000)). It is not sufficient for an expert *alone* to understand a construction; the jury must be able to do so as well. *Power-One Inc. v. Artesyn Techs., Inc.*, 599 F.3d 1343, 1348 (Fed. Cir. 2010) ("The terms, as construed by the court, must ensure that the jury fully understands the court's claim construction rulings and what the patentee covered by the claims.") (internal citation and quotations omitted). WSOU's discussion of polarized sunglasses and the "concept" of splitting a light beam divides this term into abstract, unrelated parts and confirms just how adrift a juror would be when confronted with this term without a clarifying construction.

Nowhere does WSOU dispute that a PBS reflects light of one polarization and transmits light of an orthogonal polarization; instead, WSOU's arguments relate to whether the claimed PBS must be construed at all, and if so, if the PBS is limited to a cube. PRBr. at 1-3. Because, as shown above, a construction is needed, any construction adopted by the Court should include the aspects of this term of art on which the parties agree: a PBS is an optical component that reflects light of one polarization and transmits light of an orthogonal polarization.

WSOU's remaining arguments are directed to whether the claimed PBS is limited to a cube. As Microsoft explained in its responsive brief, the only specific embodiments disclosed in the 286 patent are of a cubic PBS (Resp. Br. at 4)¹; while the term "PBS" is certainly used by

¹ WSOU makes much of the fact the PBS appears in the 286 patent in certain places without being preceded by the word "cube" or "cubic." PRBr at 2. However, WSOU makes exactly the opposite argument with respect to the SLM term (discussed below), claiming that the use of an

itself, there is no mention in the 286 specification of a plate PBS. Given that claim language must be construed in accordance with its "[e]xtensive, consistent usage in the specification," Microsoft maintains that the proper construction of PBS in the context of the patent requires a cube. *Saffran v. Johnson & Johnson*, 712 F.3d 549, 560 (Fed. Cir. 2013); *Trs. of Columbia*, 811 F.3d at 1364 (Fed. Cir. 2016) (quoting *Astrazeneca AB v. Mut. Pharm. Co.*, 384 F.3d 1333, 1340 (Fed. Cir. 2004)) ("the patentee's choice of preferred embodiments can shed light on the intended scope of the claims."). If the Court determines a broader construction is applicable, it should not be broader than the scope suggested or otherwise not objected to by WSOU, namely "an optical component that is either a plate or two conjoined prisms, that reflect light of one polarization and transmit light of an orthogonal polarization."

B. "quarter-wave plate" (286 Patent, Claim 15)

Claim Term	Microsoft's Proposed Construction
quarter-wave plate	optical component that shifts a polarized light beam passing therethrough
	by one quarter wavelength

The parties agree that "quarter-wave plate" is a term of art with an accepted meaning in the optical arts. Microsoft's proposal, confirmed by substantial extrinsic evidence, provides that meaning, explaining that a person of ordinary skill in the art would understand that a quarter-wave plate produces a phase shift of 90 degrees in a polarized light beam that passes through the quarter-wave plate. Resp. Br. at 6-7. Unable to respond substantively, WSOU rails about imprecision in "real applications" and manufacturing tolerances. But these arguments are

adjective (two-dimensional) before that term is proof that the term is *not* so limited. PRBr. at 5. WSOU cannot have it both ways.

² Furthermore, Hecht does not, as WSOU argues, suggest that there is no truly polarized light. Dkt. 45-5, Hecht at 350 (discussing "special circumstances" in which light is polarized). Rather, Hecht states that *most* light is generally "partially polarized," while fully polarized light is an "extreme." Dkt. 48-1, Hecht at 324. In no way does this suggest that polarized light does not exist in real world applications, especially exacting optical applications such as image projection

irrelevant, because "[m]anufacturing tolerances are immaterial to the interpretation of claim language." *Senmed, Inc. v. Richard-Allan Med. Indus., Inc.*, 888 F.2d 815, 821 n.10 (Fed. Cir. 1990) (overruled in part on other grounds).

With respect to the phase shift of 90°, the definition that WSOU quoted from the Hecht textbook is particularly informative: a quarter-wave plate is "an optical element that introduces a relative phase shift of $\Delta \varphi = \pi/2$ between the ... components of a wave." Dkt. 45 ("PBr.") at 5, PRBr. at 4, quoting Hecht, *Optics* 3d ed. 1998, at 349. There is no ambiguity in this equation – a quarter-wave plate shifts the phase by one quarter of the wavelength. Indeed, the extrinsic evidence cited by both parties shows that a quarter-wave plate shifts the phase by 90°. Dkt. 45-5, Hecht, at 350; Ex. 5, *Handbook of Optics, Classical, Vision, & X-ray Optics*, 2d ed., vol. III, at 25.6. WSOU's attempt to inject "about" into its claim is contrary to the understanding of a person of ordinary skill in the art. Further, WSOU acknowledges elsewhere, "Courts do not rewrite claims" but instead must "give effect to the terms chosen by the patentee." PBr. at 13 quoting *K-2 Corp. v. Salomon S.A.*, 191 F.3d 1356, 1364 (Fed. Cir. 1999).

Likewise, the record evidence directly contradicts WSOU's argument that the light beam need not pass *through* the quarter-wave plate. PRBr. at 4. That evidence confirms that a quarter-wave plate is a carefully chosen thickness of material that a beam must travel *through* in order to experience a phase shift:

The linear birefringence or double refraction effect relies on the difference in the magnitudes of the wavevectors of two orthogonal linear polarization states, σ and π , when a plane wave travels through a crystalline material. Because of this difference, a phase shift between the σ and π travelling waves can be accumulated through thickness of the birefringent material.... When the phase shift Δ reaches

that involves the heavy modification of light beams. Indeed, this passage in Hecht supports Microsoft's construction, as Hecht references "polarized" rather than "partially polarized" light when discussing QWPs.

 \pm 90°, circularly polarized radiation is generated, and such a device is usually termed a *quarter-wave phase plate* or a *quarter-wave phase retarder*.

Ex. 5, *Handbook of Optics, Classical, Vision, & X-ray Optics*, 2d ed., vol. III, at 25.6 (emphasis added). The Hecht textbook confirms this, noting that circularly polarized light "will emerge" from (and thus, have passed through) a quarter-wave plate as linearly polarized light and setting out a formula for the material thickness required to achieve a 90° phase shift. Dkt. 45-5, Hecht, at 350 ("Quarter-wave plates are also usually made of quartz, mica, or organic polymeric plastic. In any case, the thickness of the birefringent material must satisfy the expression $d(|n_0 - n_e|) = (4m + 1)\lambda_0/4$."). WSOU's suggestion that a 90° phase shift could somehow (contrary to the laws of physics) be achieved by reflection alone is entirely unsupported argument and directly contradicted by the patent and WSOU's own extrinsic evidence.

C. "spatial light modulator (SLM)" (286 Patent, Claim 15; 241 Patent, Claim 15)

Claim Term	Microsoft's Proposed Construction
spatial light	optical component with a 2-dimensional arrangement of pixels that
modulator (SLM)	displays an image

The parties agree that "spatial light modulator" is a term of art. PBr. at 6. As with any term of art, its proper interpretation is guided by the specification. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005). WSOU has not identified any differences or limitations in how this term is used in the 286 or 241 patent; nor could it, given the term's consistent use in both patents. *See* Resp. Br. at 10-11.

The intrinsic evidence confirms that an SLM is an optical component with a two-dimensional array of pixels that imparts an image on a beam of light. Resp. Br. at 10. WSOU ignores this, and via reference to Wikipedia, seeks a purely functional construction of the term that would encompass essentially *anything* that does *something* to light. PRBr. at 4-6. But terms are not to be construed in the abstract; the 286 and 241 patents both explain that their "Field of

Invention" is *image projectors*, it is in this context that "spatial light modulator" must be construed. *Medrad, Inc. v. MRI Devices Corp.*, 401 F.3d 1313, 1319 (Fed. Cir. 2005).

The only examples of image projector SLMs in the 286 and 241 patents, as well as the incorporated by reference 638 patent,³ have a two-dimensional array of pixels that display an image and impart that image on a light beam. Resp. Br. at 10. This planar array of pixels controls the dimensions (length and width) of the SLM. *Id.* This length and width drove the problem and the resulting solution of the 286 patent – reorienting the SLM so that its "dominant dimensions are parallel to the plane of the light source." 286 at Abstract, 1:31-34. Likewise, the extrinsic evidence confirms that image projector SLMs have an array of pixels. Even WSOU's Warde reference (Dkt. 45-6) does not suggest that there are SLMs without an array of pixels. Indeed, the only SLMs that Warde describes as used with image projectors have a two-dimensional array of pixels. Warde at 3978 (describing "the development of low-cost CTPSLM's with millions of pixels that could find applications in areas such as large-screen, high-definition projection displays, infrared scene projectors, and industrial inspection systems.").

Unable to refute this evidence, WSOU's reply repeatedly mischaracterizes Microsoft's construction. Microsoft does not "ignore" the specification's statement that the "SLM is adapted to modulate received illuminating light using a spatial pattern generated by a plurality of pixels to form the image." PRBr. at 6. Rather, this passage supports Microsoft's construction, as it confirms that the SLM modulates light using a plurality of pixels. Likewise, Microsoft's

³ WSOU's argument that the 241 patent only partially incorporated the 638 patent is contrary to the law. PRBr. at 7, citing *Callaway Golf Co. v. Acushnet Co.*, 576 F.3d 1331, 1345 (Fed. Cir. 2009). Callaway did not involve incorporation by reference, but instead merely a reference to another patent. Here, the 241 patent expressly stated that the 440 application (issued as the 638 patent), "is incorporated herein by reference in its entirety." 241 patent at 3:7-10 (emphasis added). Such language "is plainly sufficient to incorporate [the referenced patent] in its entirety" Paice LLC v. Ford Motor Co. 881 F.3d 894, 907 (Fed. Cir. 2018).

definition does not limit an SLM to rectangular embodiments (PRBr. at 6); circles and other twodimensional shapes provide a two-dimensional array.

II. U.S. PATENT NO. 8,965,978 (6:20-cv-457-ADA)

A. "lobby" (Claim 12)

Claim Term	Microsoft's Proposed Construction
lobby	software and/or hardware that matches users to form groups

"Lobby" is not a physical world term, such as a chat room or a bulletin board (neither of which has any bearing on these claims), where a POSITA might understand its virtual, digital equivalent. And, WSOU never explains how any unknown digital equivalent of a physical lobby could perform the functions ascribed to the claimed "lobby." As Microsoft explained (Resp. Br. at 13), the concept of a "lobby" is fundamental to the 978 patent and the asserted claims, as the lobby must (1) compare profiles of users with attributes of a request to determine the users' gaming skill level and (2) form a gaming group containing those users that have substantially the same gaming skill level as that required by the request. 978 patent at 7:55-57. Since a physical lobby is just a space in a building, WSOU's claim that the term would be understood to be its "digital equivalent" makes no sense in the context of the 978 patent.

The Cont'l Circuits case that WSOU cites does not compel any different result. Cont'l Circuits begins with the long-accepted premise that "descriptions of the "present invention" as a whole' could limit the scope of the invention." 915 F.3d 788, 798 (Fed. Cir. 2019) (citing Verizon Servs. Corp. v. Vonage Holdings Corp., 503 F.3d 1295, 1308 (Fed. Cir. 2007)). The Federal Circuit has long limited claim scope based on statements such as "the present invention includes" or "the present invention is," including in Verizon. See Blackbird Tech LLC v. ELB Elecs. Inc., 895 F.3d 1374, 1377 (Fed. Cir. 2018) (listing cases). The patent specification at issue in Cont'l Circuits, however, used optional language ("the present invention can be carried out

...") and exemplary language ("for example, the present invention ...") to modify its descriptions of "the present invention." 915 F.3d at 797. Under those particular facts, the court held that the descriptions "do not characterize the present invention 'as a whole." *Id.* at 798.

But the 978 patent does not use that optional or exemplary language. Rather, it unambiguously states: "[i]n general, lobbies provided by the present invention carry out: (a) group formation and management, and (b) matchmaking activities associated with sessions." 978 patent at 7:55-57. There is no "can be" or "for example" language here as there was in *Cont'l Circuits*. The description of *the present invention* in the 978 patent applies to the invention as a whole and limits the scope of the invention. *Cont'l Circuits*, 915 F.3d at 798. *See also GPNE Corp. v. Apple Inc.*, 830 F.3d 1365, 1371 (Fed. Cir. 2016).

Finally, WSOU apparently seeks to dispose of claim construction entirely, essentially arguing that words not already recited in the claim cannot be used to define a term. But that is the very point of claim construction. *Abbott Labs. v. Sandoz, Inc.*, 544 F.3d 1341, 1360 (Fed. Cir. 2008) ("claim construction often calls upon words other than those of the patent, lest the claim simply define itself."). Unsurprisingly, WSOU cites no law to support its extreme proposition.

B. "third party lobby" (Claims 1 and 12)

Claim Term	Microsoft's Proposed Construction
third party lobby	lobby separate from the local lobby associated with the gaming session

The *only* structure recited in system claim 12 is a memory storing instructions to implement a lobby. That claimed lobby is "operable" to perform the remaining steps. To the extent that WSOU argues that none of the steps after the "receive one or more identities" step is performed by the lobby, they are then divorced from any structure, resulting in an impermissible hybrid apparatus and method claim. *Rembrandt Data Techs., LP v. AOL, LLC*, 641 F.3d 1331, 1339 (Fed. Cir. 2011). Since claims should not be construed in a way that renders them invalid,

WSOU's argument that the lobby of claim 12 is unrelated to the steps recited therein must fail. *Ruckus Wireless, Inc. v. Innovative Wireless Sols., LLC*, 824 F.3d 999, 1004 (Fed. Cir. 2016) (claims construed to preserve validity).

With respect to claim 1, WSOU attempts to disembody the method steps from any structure whatsoever. WSOU argues that the relationship between the claimed "request" and the "third party lobby" is "sufficiently bounded," but never explains what those bounds are. Microsoft's construction explains the distinction among the third party lobby, which receives the "request," and the entity forwarding the request—*i.e.*, the local lobby. Further, "[i]t is well-established ... that claim terms are to be construed consistently throughout a patent." *Phil-Insul Corp. v. Airlite Plastics Co.*, 854 F.3d 1344, 1359 (Fed. Cir. 2017), (citing *Rexnord Corp. v. Laitram Corp.*, 274 F.3d 1336, 1342 (Fed. Cir. 2001)); *Phillips*, 415 F.3d at 1314. There is no reason to depart from this canon of construction.

WSOU admits that its discussion of the patent's usage of the term "separate" is not relevant to the distinction between the terms "lobby" and "third party lobby." PRBr. at 8. "Separate" in Microsoft's proposal simply distinguishes between the two different lobbies. As explained, the asserted claims require these two lobbies to be distinct from each other — otherwise there would be no need to forward the request to the third party lobby as recited in every asserted claim. Resp. Br. at 15.

III. U.S. PATENT NO. 9,814,988 (6:20-cv-455-ADA)

A. "adaptor unit" (Claim 20)

Claim Term	Microsoft's Proposed Construction
adaptor unit	a device, having a video receiver, hard disk, and CPU that encodes video
	data, that provides a game console with access to interactive services

The patentee did not invent everything that connects to or increases the functionality of game consoles, despite WSOU's urging. PRBr. at 9-10. Rather, the 988 patent states that "[o]ne

aim of the present invention is to provide an adaptor unit for a games console which includes television signal receiving circuitry and which allows the games console to function as an interactive television receiver." 988 patent at 1:18-21. This is the goal of the invention, not an embodiment. *GPNE Corp.*, 830 F.3d at 1371 (summation sentence limits the invention scope). Microsoft's proposal provides the elements the patent requires for achieving its purpose.

Explicit lexicographic "redefinition or disavowal" is not required for claim construction. *Trs. of Columbia*, 811 F.3d at 1363. "[W]hen the scope of the invention is clearly stated in the specification, and is described as the advantage and distinction of the invention, it is not necessary to disavow explicitly a different scope." *On Demand Mach. Corp. v. Ingram Indus.*, *Inc.*, 442 F.3d 1331, 1340 (Fed. Cir. 2006). Here, as Microsoft explained, the specification consistently describes the invention as a device having a video receiver, hard disk, and CPU that encodes video data—which together allow the adaptor unit to provide the game console with access to interactive services.

To the extent understandable, WSOU's third argument misreads *Power Mosfet*. First, the passage that WSOU purports to quote actually reads: "Furthermore, while interpretations that render some portion of the claim language superfluous are disfavored, where neither the plain meaning nor the patent itself commands a difference in scope between two terms, they may be construed identically." 378 F.3d. 1396, 1410 (Fed. Cir. 2004). Indeed, the *Power Mosfet* court ultimately gave the same construction to two different phrases. *Id.* Here, nothing in the specification compels the adaptor unit to have different meanings in claims 1 and 20. Second, WSOU's argument that the "adaptor" in claim 20 cannot include any of the components listed in claim 1, when taken to its ultimate conclusion, would result in the adaptor unit of claim 20 being non-functional, as it would lack even a game console interface.

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CERTIFICATE OF SERVICE

I certify that on February 24, 2021, I electronically filed the foregoing with the Clerk of Court using the CM/ECF system, which will send notification of such filing to all counsel of record as identified below.

/s/ Irene Yang
Irene Yang